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E D I T O R I A L

TECHNOLOGICAL HELP AS A PATH TO PEACE

WE received recently some excellent photographs from a former student, Dr. Filemon Tanchoco of Manila Central University, which showed the new manufacturing pharmacy laboratory which he has installed. This is to be used for graduate instruction in this Philippine institution. In looking over these photographs and admiring the skill and judgment used by Dr. Tanchoco we found ourselves in a reflective mood concerning the current chaos in Southeast Asia and its eventual fate. Our minds went to some of our friends who are citizens of Thailand and their efforts to raise the health and living standards there, and we wondered whether their future held the same sort of tragedy which so recently has befallen so many in Vietnam and which may well extend to Laos and Cambodia.

It is unfortunate that our efforts to help the underprivileged people of these lands have been so inexorably identified in the minds of these people with the old imperialism which once grippped Asia. It is also unfortunate that this old imperialism was held so tenaciously that when concessions were made they were truly characterized by the old expression "too little and too late". If France, for example, had granted complete independence to Vietnam when we did to the Philippines, part of that unfortunate land would not now be lost to communism. Setting up a puppet government whose emperor basked on the Riviera was sheer folly and it was such policy that lost France the support she needed from the Vietnamese themselves. How different in the Philippines! They, too, were threatened with communism but with their complete independence assured they alone met and conquered this threat. Many Asians consider communism as a convenient means of escaping Western imperialism not realizing that the new regime will be far worse. White man's imperialism and exploitation over the past century is now bearing bitter fruit indeed.

There are still many in high places who do not understand what is taking place in Asia and Africa. These peoples refuse to continue

as third or fourth rate world citizens being exploited by foreign masters. They are only faintly concerned with our ideological struggle with communism and are unwilling to fight for us. They want food, shelter, clothing and good health and the means to achieve it. They are tired of living in poverty and disease without hope except for some cataclysmic change in the order of things. Communism is attractive if for no other reason than that it makes one important for he is no longer just a "native" as he is so patronizingly called by his white rulers. He, by this simple change, becomes hated and feared, a state much more satisfying than simply being ignored.

We can ship arms and ammunition, establish air bases, and send experts on military operations but to no avail unless we help these people in their efforts to gain a decent existence. The $2 billion we spent in Vietnam is ample evidence of this. We cannot win this world struggle by force; it can be won only in the minds and hearts of the little people of the world who today aspire to improve their lot.

We have vast numbers of atomic bombs but to what avail? Dare we drop them where the struggle really is taking place, in Asia and Africa? This same amount of effort and production properly directed could work miracles and show the communist challenge for what it truly is.

We are proud to have played a small part in helping Filipinos, Siamese, Indians, Pakistanis, Chinese and others develop their technology in healing men's ills. Upon such accomplishments, if properly increased, we might hope to bring about world peace. If we place our faith on force and this above all else, we shall lose and do so in a struggle which may well carry all of civilization to disaster.

L. F. Tice

"DO YOU FILL PRESCRIPTIONS HERE?" *

By Robert F. Miller **

"DO you fill prescriptions here?" I don't believe there is a single pharmacist in this room who has not had that question asked of him in his own store.

Think about it. Isn't that true? Can anyone challenge that statement?

The customers who ask that question aren't the ones that bother me. No, it's the customers who don't ask, "Do you fill prescriptions here?" Perhaps they don't ask that question because they take their prescriptions elsewhere for filling—they buy some convenience items from you and then go out of their way to get their prescription filled at some other store. Isn't it logical to assume, by the same token, that those people buy their other drug products in supermarkets?

Why do those customers go elsewhere? I submit my own reasons or answers. If you don't agree with them, I won't be angry because I hope you will at least agree that they are thought-provoking.

Here is a slide of a peak or mountain in Colorado. I am going to pay $10 to the individual who can tell me the name of this peak or mountain. Someone said Pike's Peak. I have now asked that question personally, of over 500 people individually (not in a group like this), and I still haven't gotten the correct answer. I did notice one thing, however, that is significant, and that is that almost all those responding answered Pike's Peak. Do you realize there are over 26 mountains in Colorado that are higher than Pike's Peak.

I use that illustration to make this point. Retail pharmacy must continue to promote, to advertise, to tell and retell the story of pharmacy, but this promotion or selling, if you will, must be accomplished by changing constantly or keeping abreast.

Pharmacy must sell and continue to sell pharmacy itself, and this selling job cannot be accomplished by relying on signs alone.

To the manufacturers in this room: you can do your part by offering displays and signs that make it convenient and easy for our

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* Presented at Rutgers Pharmaceutical Conference—May 12, 1954.

** Manager, Prescription Ware Division and Pharmaceutical & Proprietary Division, Owens-Illinois, Inc.

retail friends to keep pace in this fast changing economy. Certainly the pharmacist should rightly expect to pay or do something for the various devices which manufacturers provide to help pharmacy keep abreast of the times. This is about the only way to prevent abuses of privileges of this sort.

For the next few minutes I am going to talk about four fundamentals in prescription department and drug store merchandising that I believe will point up the type of "sell" I believe necessary to retail pharmacy.

I won't pretend that I am going to present anything particularly startling or brand new, or a new concept as far as drug merchandising is concerned. However, I present these fundamentals with the hope that you will find them interesting and thought-provoking.

Our first fundamental should be: "LOOK THE PART." It's unreasonable to expect any customer to buy from you or *you* or *you* for any reason whatsoever except *his* or *her* own advantage. It's *childish* to hope that people will continue to buy from you if you don't give them more for their money than they can get from someone else. And I don't mean better prices! I mean better service, better lighting, cleaner displays, etc.

"LOOK THE PART!" You must attach importance to something by its own physical presentation and your own attitude toward it. That is exactly what takes place in the massive displays of fresh produce in large markets. The dozens of bushels of apples or peaches serve notice to the public—"The reason we have so many of these is that they are *good,* and we sell so many of them." So the store with the dozens of bushels of apples sells dozens of bushels while the market down the street which cautiously stocked two bushels still had one bushel left at the end of the day. Is there anything different about that than the store with a prominent prescription department, in contrast with the store where the prescription facilities say to the onlooker, "We do not fill many prescriptions"?

Perhaps you remodeled your prescription department 5 or 10 years ago, but can you tell me of a better investment or a better way to enthuse your customers, your own clerks, your pharmacists, and you yourself, by doing some additional prescription department modernization now.

Look at this artist's conception of a modern prescription department as shown on the cover of one of the recent drug magazines.

Perhaps you should consider physically elevating *your* prescription department. Perhaps, also, you might consider placing carpets around your prescription department area, all of which in my opinion say, "Our prescription department is important to us."

"LOOK THE PART" applies to other departments in your store as well. Stop customers who are buying convenience items from you —and drug items from the supermarket—by displaying in the same manner that the supermarket does!

I'll talk about displays under another fundamental; however, I'd like to mention here that prices or price tags, in a neat and legible manner, are very necessary and are one of the weapons of the supermarkets.

Here are some packages that have not provided for price marking.

Again, to those manufacturers present: provide space for a price on your cap, on your label, or on your carton. And to you pharmacists: see that your clerks use this space where it is available.

Prices themselves are not nearly as important as you might think, but the fact that each item is prominently priced is what is important, at least that is what the supermarkets have proved to themselves.

General Food designed this menu-type poster solely for test purposes, and, as you can see, the items listed are priced far below cost.

This poster was left in 15 large supermarkets in Indianapolis. The deal with each supermarket manager was that they were to leave this poster up in a prominent place in the store for a period of two weeks, except that if any customer actually indicated that he or she wanted to buy one of the products at the price indicated, the poster should be removed promptly . . . The result was that 11 of the posters stayed up for the full two weeks without anyone trying to make a purchase at the prices indicated . . . ! The moral is that when people go shopping, they are thinking of merchandising and are looking at the merchandise. The package is the place to do the strongest type of self-selling job, and a proper price on this package is an essential today.

Getting back to the prescription department: Is there nothing to learn from the merchandising methods of the jewelry store where the diamond bracelet or the $5 earrings are handled in a way connoting respect, even admiration?

By contrast, have any of you seen a prescription dumped on a counter or pushed toward a customer as though it were as unimportant as a cake of soap?

"LOOK THE PART!" Attach importance to the thing you want others to consider important, particularly your prescription department. It must shine like a never setting sun, and you yourself must be proud of it.

Perhaps number two on our list of fundamentals might be "MAKE IT EASY TO BUY."

Departmentalization. That has been overworked, and I won't say another word on it. However, there is one point I want to make, and we can approach it in this manner.

Did you ever see a clerk say, "I'll get the pharmacist for you," when asked about a prescription? Of course, you have, and of course you know it works to the pleasure and satisfaction of the customer. You have also seen the awful spectacle of a customer being told to go back to the prescription department—where he waits without knowing whether anyone knows he is there.

Good merchandising always assumes that every customer is a stranger. It assumes that he does not know where to go or what to do. It takes so little time and means so much when you make it easy for your customers to buy and buy more.

The little bell and sign which tells him to ring for the pharmacist assures him that his presence there is known even if he may have to wait a moment.

Little signs changed constantly such as this, "If you are waiting for your prescription, please be patient for a few minutes, and you will receive the same careful attention that someone else is getting now."

That twenty-seven word sign is from a small store in Colorado Springs. "Making it easy to buy certainly applies to out-front items as well. Retail drug store merchandisers can well profit from a page out of the grocers manual and promote sales through the use of floor displays. A mass display using cut shipping cases is one good way to adopt the principle of "we have so many of these because we sell so many." You will be surprised how well it works.

To those manufacturers here, is there any reason why all of your products that lend themselves to mass displays should not be marketed in merchandising cases?

While on the subject of cases, there is a term used by manufacturers called, "round-the-case" labeling, which is coming into popular usage today. Surveys in the grocery trade have shown that warehouse efficiency can be increased 50% when the product in the case is labeled on four sides as opposed to one or two side labeling. Why do I mention it here? To urge manufacturers to review this study which certainly we'll be glad to make available to them. But also to point out that clearly labeled cases in the retail pharmacy stockroom might prevent overstocking where this overstocking is due to poor identification on the outside.

Then there is the fundamental of "making it pleasant to buy." Most people are pretty simple in their habits and in their own wants and in their needs. They do not expect and cannot expect to get their thrills from a Hollywood mode of living. They look for satisfaction and interest in their very simply daily routine.

It might not seem that there is anything very glamorous about buying a potato or tumbler full of cheese spread or a half-dozen sweet rolls. Yet markets all over this country have learned that it pays to make marketing pleasant and interesting and colorful.

Walk into a Penn Fruit Market in Philadelphia, and you will be promptly struck by the colorful atmosphere of a flower shop. In the delicatessen department you will see chicken barbecued before your very eyes, inside glass enclosed ovens. In the bakery departmnt you will not only see dozens of Banana Pies, but you will also see bunches of fresh bananas in the background and on the counter of the department, silently emphasizing the flavor sealed within these fresh pies. Shopping is fun, shopping is interesting; people like to see, and they judge by what they see.

Is the subject of your business less fascinating, less interesting to your customers than the subject of a banana pie? Ask the editors of *Time* magazine where their department of health and medicine ranks in readers' interest and popularity. What of all the drama, the information, the education available in the field of healing. What have you done to bring something of interest to your customers in the physical presentation of your prescription department? People like to look—they like to see, and they *buy* by what they *see*.

Perhaps more of your customers will be tempted to buy or to bring their prescriptions to you if they are intrigued by the way you

conduct the business in your prescription department and its allied departments.

While we are on the subject of making it pleasant to buy, don't overlook the tremendous shift in income groups and educational groups.

Fourteen years ago only 6.3% of the total population made over $3,000 a year. Today, over 59% are in this $3,000 and over category. The point is that your display and sales appeals must be aimed at more people with a higher income and a higher level of intelligence.

Point four might be "MAKE IT PERSONAL."

In addition to the personal service, which generally comes to mind when we talk about pharmacy, remember that there are other connotations of the word "personal." One might be the ability of an individual to make his own selections and find the brands he specifically wants. This is in itself a means of personal gratification.

Over and over again, the personal touch has made reputations and improved the reputations of even the greatest business establishments. Department stores like Marshall Field of Chicago take their greatest pride in the way they handle a scrawled request such as this one. "Here is three dollars I have saved up to buy my little sister a birthday present. She is seven years old and likes most to play with dolls." You can bet that Marshall Fields is not too big to see that the *signer* of that note gets the fullest of value and satisfaction for himself and his seven year old sister in the gift they select.

Big stores and little stores may get along without a degree of personal consideration, but they get along in *spite* of this lack. And they would get along better if this lack were erased.

While it certainly is not applicable to the majority, there is one thing I have noticed in some stores.

Perhaps I can best state it this way. Recently I saw a sign in front of a church announcing the minister's topic as "A Bad Liver is Sometimes Mistaken for Piousness." By the same token, coldness and disinterest should never become synonymous with the professional manner of the pharmacist.

"MAKE IT PERSONAL."

I started out by asking, "Do you fill prescriptions here?" While I covered several other subjects, I think they all are related.

I like to think that Mr. and Mrs. Consumer will not pull back or retrench in 1954 if you, the retail pharmacist, can intrigue him with

your boldness, intrigue him with your prices, imagination, flexibility and displays changed constantly.

In other words,

LOOK THE PART

MAKE IT EASY TO BUY

MAKE IT PLEASANT TO BUY

MAKE IT PERSONAL

But change and put "SELL" in all of these.

Manufacturers are geared to help you along these lines, and it's your job to carry this through directly to the consumer.

Many wholesalers have entire departments devoted to modernization and display. Use all the services of your drug wholesaler. While I am on wholesalers, I sometimes hear a term I dislike intensely: "High cost of distribution." I think this definitely is a misnomer, as distribution costs are not costs at all. They are merely a device for permitting the lowering of production costs, and they really add value to a product.

Certainly I accept and value precedent and tradition. But I honestly believe that any business or profession should be reviewed periodically, so that all previously accepted procedures can be scrutinized in order to determine their worth in a dynamic economy. And who can deny that we are in a dynamic economy?

It's human nature to resist change. Let's shake the consumer loose from his dollar, for if you don't, one of your competitors *will*, by creating in him the desired reaction, the desire to buy. Do this by exciting him with your clean and frequently changed displays, your changed and modernized departments.

As far as your prescription packages are concerned, adopt a line within cost limitations which mean that they are prescription packages. Then be sure you are proud of them, as they are the only items leaving your store which represent your years of professional training. Remember, the reputation of the pharmacy goes with the prescription package and its contents.

It's not my theory, but I believe it would be true that the entire American economy and its future rests in selling, and I'm not talking about salesmen that carry sample kits, etc. No, you, the pharmacist, retailer, and merchant are the salesmen I am referring to.

Here's why I say that. Many economists, statesmen, and others from foreign countries continue to come to this country in search for the answer to this question: "How and why has America attained the highest standards of living in the world?" Many are the answers, and each proponent believes his to be the main reason: Standardized wants, abundant natural resources, 150 million horse power, transportation system, unlimited financial resources, and many others.

All, of course, are important, but I ask these questions: "What is the prime mover behind all of these?

"Who is it that sustains a constant pressure upon us to improve our lot?"

The answer, and certainly not mine alone, is salesmen, selling, and salesmanship.

This audience is made up of salesmen by profession. Those who cease to be salesmen quickly fall into the group composed of inefficient operators:

Pharmacists whose stores produce only enough net profit to pay the owner-pharmacist salary;

Not a return on his business investment;

Not a return on his years of study and professional training.

I've tried to sell you an idea today. That is: to sell and to continue to sell, to be optimistic, as certainly we owe it to our country, to our business firms, and certainly to ourselves to be particularly optimistic this year.

I hope that I have been able to intrigue you with my figures of speech. If my thoughts presented here do plant a seed and stimulate action to do a better selling job, I'll consider my efforts worthwhile.

IN VIVO EXPERIMENTS WITH CARCINOGENS. IV. A SURVEY FOR THE PERIOD 1949-52

By John R. Sampey, Ph. D.*

THIS paper cites one hundred references to *in vivo* experiments with carcinogens not covered in recent surveys for the period 1949-52 (82-87).

I. Inorganic Chemicals

Radioiodine. Furth, et al. (35), described adenoma from large doses of I^{131}. Goldberg and Chaikoff (41) induced benign hyperplasia in mice with this isotope; earlier these investigators (40) described the destruction of the thyroid in new-born rats by intraperitoneal injections of large doses of radioiodine.

Radon Seeds. Radon seeds implanted in mice produced spindle-cells and melanoblasts (65).

Arsenic. Senegireff and Lombard (93) found no evidence that As_2O_3 caused occupational cancer in workers.

Graphite. Gloyne, et al. (39), recorded two fatal cases of pneumoconiosis among workers after long exposure to graphite dust.

Silica. Carminati and Chirico (12, 13) produced tumors in rats by injections of sand alone or mixed with benzopyrene.

Strontium Sulfate. $SrSO_4$ alone or with benzopyrene caused neoplasms in the inguinal region of animals (11).

II. Hydrocarbons

Benzopyrene. Three references have just been cited to the carcinogenic action of benzopyrene associated with inorganic chemicals (11, 12, 13). Biagini (7), Graffi (43) and Peacock, et al. (76), studied the carcinogenic action of this hydrocarbon in mice. Waller (100) ascribed the presence of this carcinogen in the air as signifi-

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cant in his investigation of the pollution of the atmosphere of cities and towns.

Dibenzanthracene. Rudali (80) induced mammary cancers in mice by injections of DBA. Heston and Dunn (50) noted a marked difference in the carcinogenicity of DBA in susceptible and resistant strains of mice. It has been reported that mice reaching a certain age resisted this carcinogen better than younger animals (21). Neal, et al. (77), recorded negative results from sinus implants of DBA and tobacco products in chicks.

Dimethylbenzanthracene. Levy, et al. (58), studied the action of single applications of DMBA to lip of mice. Graffi (43) produced cancers in mice with this same carcinogen.

Methylcholanthrene. Horanyl (52) produced cerebral tumors in rats with implants of MC. Hitchcock (51) found that bile failed as an abetting agent in mice fed the hydrocarbon. Bonser (8) induced mammary cancer in mice by local application of MC.

Mineral Oil. Schneider (88) described 5 cases of pulmonary reaction simulating malignant growths in patients receiving injections of mineral oil. Smith, et al. (95), investigated the carcinogenicity of petroleum products by painting mice with cracked oils boiling above 700° F.

III. Organic Nitrogen Compounds

Betanaphthylamine. Delinotte, et al. (20), recorded 2 cases of papillomas in workers handling this amine. Barsotti (3) and Bonser (9) discussed further the occupational hazards in dye plants making this intermediate. Gehrmann, et al. (36), and Maguigan (60) produced bladder cancers in dogs by feeding betanaphthylamine.

Benzidine. Benzidine has been reported the most carcinogenic of dye intermediates (3), but Bellesini (4) reported no bladder tumors in 15 years in a benzidine plant in Upper Italy. Maguigan (60) induced oral and liver tumors and leukemia in rats by feeding this carcinogen. Baker (2) separated a benzidine derivative from the urine of workers handling the compound, and he produced cancers of the bladder in mice injected with the derivative.

Dimethylaminoazobenzene. Corre, et al. (15), Laws, et al. (57), and Glinos, et al. (38), studied the production of DAB liver tumors in rats. Dyer (26) reported that 6 of 13 rats given DAB and a supplementary choline feeding had carcinoma of the liver, while only 1 of 14 controls given only DAB developed neoplasms.

Acetylaminofluorene. Bonser (8) produced mammary cancer in mice by feeding AAF. Laws, et al. (57), noted that liver lesions in rats were the same for AAF as DAB. Green (45) induced neoplasms in rabbits and rats with AAF alone or with cellophane.

Urethanes. Ohler, et al. (73), reported that urethane therapy for multiple myeloma for 21 months resulted in fatal liver necrosis in one patient. Bertand and Quivy (6) observed lesions in rats receiving ethyl urethane.

Aromatic Amines. Parmentier (75) produced lesions in mice by intraperitoneal injections of phenols and aromatic amines. Seifter, et al. (92), induced adenomas of the thyroid in rats fed bis-(4-acetaminophenyl)-selenium dihydroxide.

Methylthiouracil. Rats given this compound in drinking water developed carcinoma in transplanted thyroid tumors (79).

IV. Hormones

Estrogens. Several studies point to the dangers of estrogen therapy. Novak (70, 71) described a uterine adenocarcinoma in a patient receiving stilbestrol for 12 years before discovery of the neoplasm. Vass (97) reported 2 cases of uterine carcinoma after prolonged estrogen therapy.

Davis, et al. (19), hastened the death of chicks by injections of estrogens and androgens, after inocculation with cells of visceral lymphomatosis. Tumors have been produced in golden hamsters by doses of diethylstilbestrol (55). Bonser (8) used estrogens to induce mammary cancer in mice. The incidence of cancer in ovary grafts in male mice has been increased from 5% to 32.5% when anterior hypopheses were grafted together with ovaries at 1 month of age (94). Graffi and Gummel (42) reported that estrogens and androgens with croton oil had only a negligible carcinogenic action on mouse skin.

Androgens. Several investigations on the carcinogenicity of androgens and estrogens have been cited (19, 42). Woolley (101) observed the development of carcinoma in gonadectomized mice.

Cortisone. Foley and Silverstein (31) lowered the resistance of mice to the growth of lymphosarcoma by cortisone treatment.

V. Miscellaneous

Occupational. A number of occupational hazards have been cited in the foregoing sections (2, 3, 4, 9, 20, 36, 39, 60, 93, 95). Versluys (98) has studied the relation of occupation to cancer in the Netherlands, and Henry (48) has recorded the relation of skin cancer to occupation in England. Müller (68) surveyed bladder neoplasms in Basle. Ingalls (53) noted no higher incidence of cancer in one carbon black plant than in the male population of other industries. Schönfeld (89) warned of the dangers in the commercial production of colchicine. Downing (24) did the same for occupational skin cancers. Müller (69) and Scott (90) reported on the incidence of bladder tumors in the dye industries.

Tumor Cells. A number of neoplasms have been produced by injections of tumor cells in animals (16, 17, 18, 19, 28, 29, 46, 47, 61, 62, 66, 72, 96).

Smoking. The relation of cigarette smoking to carcinoma of the lung challenged a number of investigators (10, 14, 23, 27, 34, 44, 54, 63, 99, 102, 103, 104).

Milk Factor. The milk factor in mammary carcinoma has been investigated further (1, 5, 67).

Diet. Lacour, et al. (56), described the transformation of grafts of myeloma into myeloid leukemia in rats fed a very rich diet, but they noted no such change in rats kept on the usual stock diet of grains, greens and beetroot. Mefferd and Loefer (64) observed that fibrosarcoma grafts in rats kept on a diet free of vitamins A, B and D and then given riboflavin and isoriboflavin injections, grew as the animals gained weight, and decreased with loss in weight. Heated fat and cholesterol caused neoplasms in mice (22, 30).

Hyaluronidase. The purified enzyme was without effect on S-37 in mice (91), but Fuzita and Iwase (33) promoted growth of sarcoma in chickens with the enzyme.

Synthetic Products. Hydrocellulose and e-caprolactam placed under the skin or in the abdominal cavity of rats produced sarcoma (25). Oppenheimer, et al. (74), induced sarcoma in rats and mice by implants of a number of plastic films. Green (45) noted that cellophane alone caused carcinoma in rabbits, and that cellophane with AAF produced sarcoma in rats.

o-Benzoquinones. Forni and Tappi (32) recorded no neoplasms after treating the skin of rats for 110 days with 3 quinones.

Mucin. Injections of mucin in chickens promoted the growth of sarcoma (33).

Virus. Gregory (46) observed that filtrates from human sarcomas injected into rats, chicks, etc., caused neoplasms of the stomach and leukemia, but that heating the extracts to 56° for 1 hour destroyed its carcinogenicity.

Epoxides. Hendry, et al. (49), produced sarcoma in rats with cyclohexene dioxide.

CCl_4. Intragastric installation of CCl_4 caused neoplasms in the liver of mice (81).

Trypan Blue. Gillman, et al. (37), noted lymph tumors in rats from injections of this dye.

Environmental Factor. Lombard and Potter (59) called attention to the strong correlation between cancer of the cervix and marriage before the age of 20. Portmann and Mulvey (78) report that pregnancy may result in exacerbations of Hodgkin's disease.

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MOSES MAIMONIDES

A Review of His Life and Contributions to Medicine

By William L. Blockstein *

—When I have a difficult subject before me—when I find the road narrow and can see no other way of teaching a well-established truth except by pleasing one intelligent man and displeasing ten thousand fools—I prefer to address myself to the one man, and to take no notice whatever of the condemnation of the multitude—

MOSES BEN MAIMON
Introduction to the Guide to the Perplexed

HIS LIFE

MAIMONIDES (properly, Moses ben Maimon), often called RaMBaM, from his title of rabbi and the initials of his name, called in Arabic Abu Imram Musa ibn Maimun ibn Abdullah was born in Cordova, Spain on Nisan 14, 1135. (Nisan is the Hebrew month that corresponds to the English period from March 22 to April 20.) From his father, Maimon ben Joseph, he received his first instruction in Bible, Talmud and mathematics, and later on, Arabic teachers introduced him to philosophy and natural sciences, especially medicine. When he was 13, Cordova was conquered by the fanatical Almahades, who compelled non-believers to accept Islam or "emigrate". Like the majority of the members of the Cordovan Jewish community, Maimon and his family left the city, and about the year 1160 arrived in Fez, Morocco. Here, too, Jews were forced to accept Mohammed as their prophet and to visit the mosques. In 1160 Maimon addressed an admonitory epistle in Arabic to the Jew-

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ish communities in which he urged them to endure their lot to the end, and to continue to practice Jewish customs.

Moses Maimonides was associated in Fez with Moslem physicians and philosophers, continued his studies there, and began to work on his commentary on the Mishnah. In his "Iggereth Hashemad" (Epistle on Apostasy) he defended those Jews who perforce confessed Islam with their lips, but he advised those who were able to do so to emigrate. The family of Maimon, seeing that their lives were in danger in Fez, fled to Palestine in 1165. This restless country held no place of safety for them, so they left, journeyed through the country and finally settled in Egypt, where Maimon died.

Maimonides, who suffered from a number of physical ills and often from the results of the slanders of informers, finally came to the conclusion that he had to pursue a practical vocation. Apparently this decision was forced on him when his brother David, who had supported both of them through his trade in jewels, had drowned in the Indian Ocean. He thus became a physician in Fostat (Old Cairo) and gave public lectures on philosophy. In 1168 he completed his commentary on the Mishnah, written in Arabic and called "Siraj" (Illumination).

In 1171 Sultan Saladin attained the rulership over the country, and under his sway, Egypt became a refuge for the persecuted Jews. Maimonides addressed a consolatory letter, "Iggereth Teman" (Epistle of Teman; i.e., Yemen) to the Jews of Yemen, who at that time were bitterly persecuted. Although not welcomed at that time by the local Jewish scholars, Maimonides was already a recognized rabbinical authority, with the result that questions of religious law were referred to him from far-off communities in the West as well as in the East. In the midst of his strenuous activity in communal affairs, and his continued studies in the Talmud, philosophy, and the natural sciences, he completed in 1180, his second important work. This was the gigantic religious code, the "Mishnah Torah", which was to summarize the entire spiritual and intellectual content of the Talmud into one organized whole. Within ten years the work was known to the Jews of Europe, Africa, and the Near East, and the first opposition to it soon began to manifest itself. In this period, too, Maimonides suffered various misfortunes, especially illness.

About 1185 he had become personal physician to many of the potentates of the land, and was especially favored by the vizer, Al-

Kadi al-Fadil al-Baisami. He soon became the head (Nagid, or "Prince") of all the Jewish communities in Egypt. He also utilized his influence in behalf of the persecuted Jews of the Orient. His practice as a physician increased greatly and occupied the greater part of his time. But his powers of labor were so highly developed that he still found time for an extensive literary activity, especially in the fields of medicine and astronomy.

About 1190 he finished his main work, "Moreh Nebuchim" (Guide to the Perplexed), his philosophical defense of Judaism. In this work, he attempted to establish a harmony between the teachings of Judaism, and the teachings of reason which, according to him, coincided to a large extent with the teachings of Aristotle, "The prince of philosophers." This work exercised a strong influence in the contemporary and subsequent Jewish world, and became a guide even to Arabian and Christian philosophers. This book, too, was violently opposed by Moses' orthodox opponents.

Meanwhile, Saladin's eldest son, Alafdal, had ascended the throne, and Maimonides became his personal physician. He dedicated several short works on hygiene to his sovereign. In this period, the greatest portion of his time was taken up by his medical practice, but he found time to correspond with Jewish communities both near and far. In Southern France, in particular, there was marked interest in and understanding of his spiritual labors; from this region came the later defenders of his intellectual works.

He died at Fostat on Tebet 20, 1204, and his body was interred in Tiberias. His fame is recorded in the saying, "From Moses (the Prophet) to Moses (Maimonides), there is none like unto Moses."

His Contributions to Medicine

It is a surprising and disappointing fact that the medical achievements of Maimonides have been grossly and arbitrarily underrated by the numerous scholars who have given due weight to his preeminence as a philosopher and codifier. He has been portrayed as merely echoing the views of Galen, Hippocrates, and the Arabian physicians, and without originality of his own. Actually, he was the culmination of a whole school of Arabic-Jewish medicine which had begun about 700, and by the time of his death, he was acclaimed the greatest physician of his day.

He began the study of medicine at an early age. While at Fez, between the ages of 23 and 30, he had the opportunity of reaching perfection in the art of healing. In his treatise on asthma, he mentions that he discussed the subject with two prominent physicians at Fez, Muhammed ibn Zhur, and Abu Yusuf. His commentary on the Mishnah, written at the age of 30, shows a medical knowledge which is on a par with his most advanced medical works, written toward the end of his life.

Shortly after he arrived in Cairo in 1165, Moses was appointed physician to the vizer of Saladin, and later to the court of Saladin himself. That he was the favorite physician of the ruling classes is evidenced by the somewhat caustic (and true?) remark that the renowned Baghdad physician Abu al-Latif (1162-1231) made about him: "He was a man of exceeding worth, but very ambitious, and catering to the powerful." Among his pupils was his son, Abraham, physician to Sultan al Kamil; Ibn Akhnin, physician to the court of Saladin's brother; and Abu Usaibu, the medical historian.

An idea of the importance and fame of Maimonides in Egypt can be obtained from a letter which he wrote to Samuel ibn Tibbon of Lunel, a physician and translator of many of RaMBaM's Arabic works into Hebrew. Maimonides wrote to dissuade Ibn Tibbon from coming to study under him in the following words: "Do not anticipate being able to spend even one hour alone with me, whether by day or night . . . My duties to the Sultan are very heavy. I am obliged to visit him every day, early in the morning; and when he, or any of his children, or any of the inmates of his harem are indisposed, I dare not quit Cairo" (about a mile and a half from his home in Fostat), "but must stay during the greater part of the day in the palace. It also frequently happens that one or two of the royal officers falls sick, and I must attend to their healing. Hence, as a rule, I repair to Cairo very early in the day, and even if nothing unusual happens, I do not return to Fostat until the afternoon. Then I am almost dying with hunger. I find the anteroom filled with people, both Jews and Gentiles, nobles and common people, judges and bailiffs, friends and foes—a mixed multitude, who await the time of my return.

"I dismount from my animal, wash my hands, go forth to my patients, and entreat them to bear with me while I partake of some slight refreshment, the only meal I take in the twenty-four hours.

Then I attend to my patients, write prescriptions and diagnose various ailments. Patients go in and out until nightfall, and sometimes even, I solemnly assure you, until two hours and more, in the night. I converse with them and prescribe for them while lying down from sheer fatigue; and when night falls (or, could we say, when the last patient leaves) I am so exhausted that I can scarcely speak.

"In consequence of this, no Israelite can have any private interview with me, except on the Sabbath. On that day, the whole congregation, or, at least the majority of the members come to me after the morning service, when I instruct them as to their proceedings during the entire week. We study a little together until noon when they depart. Some of them return and read with me after the afternoon service until evening prayers. In this manner I spend that day. I have related here only a part of what you would see if you were to visit me."—When the Jewish community of Lunel asked him to translate his Guide into Hebrew, he answered that his numerous duties did not give him time, "to write even a little chapter," and that he had "become aged, but not with years." All this speaks of an immense practice and an outstanding reputation.

Moses did find time to compose a number of medical treatises in Arabic, ten of which are extant. In these he quoted profusely, not only from the writings of Hippocrates and Galen, but also from the writings of the Arabian physicians: Mesue the Elder, al-Rizi; Ibn Jajul Alfarabi (10th century); Ibn ul Wafid (997-1075); Ibn Ridwan (998-1065), Jonah ibn Janah (995-1050), Said al-Tamini of Jerusalem (10th Century), Ibn Zuhr, Ibn Roshd, Al Ghafigi (d. 1165) and others. These quotes are, of course, in addition to his many original statements included in these works. Several of these works, in Latin translation, became standard texts for centuries in the chief medical schools in Europe, Asia and Africa. The works definitely known to have been written by Maimonides are:

1. "Al Mukhtasarat" (The Extracts) as the name implies, exerpts from the works of Galen.

2. "Sharh Fusal Abugrat" (Commentary on the Aphorisms of Hippocrates), translated into Hebrew by Moses ibn Tibbon (son of the illustrious Samuel).

3. "Fusal Musa fit-tibb" (Medical Aphorisms of Moses), a Hebrew translation was made by Nathan Hameati under

the title "Pirke Mosheh" (Lemberg, 1850; Vilna, 1888); there is another, still in manuscript, by Zerahiah Hen. Latin translations appeared in Bologna (1489), Venice (1497, 1500), and Basel (1579). Maimonides modestly states in his preface that he gleaned these aphorisms from earlier sources, but there is not a page that does not contain his additions to and criticisms of earlier physicians. The twenty-five chapters cover the whole range of medicine.

4. "Fil Bawasir" (On Hemorrhoids), including both medication and proper diet. H. Kroner published the Arabic text in "Janus" (1911). There are in manuscript four anonymous Hebrew translations and one in Spanish (Lobre los milgros).

5. "Fil Jima" (On Coitus), written for Saladin's nephew Nur ad-Din, Sultan of Syria. It was translated into Hebrew by Z. Hen; Kroner published the original text with a German translation (1906).

6. "Maqala fir-Rabu" (Discourses on Asthma), composed in 1190. This was translated into Hebrew by Joshua Xativa under the title, "Sefer Hamisadim" (Book of Nourishments).

7. "Kitab as-Summum wal Mata-harriz mum al-Adwuja al Quttala" (On Poisons, and Protectives against Deadly Reptiles), this deals with injuries caused by reptiles, insects, mad dogs and humans, and was composed in 1199. It was translated into Hebrew by Moses ibn Tibbon, into French by I. M. Rabbinowicz (1865), and into German by Steinschneider (1873).

8. "Fi-Tadber as-Sihah" (On the Regulation of Health), translated in a seven hundred year period into Hebrew, Latin, Czech, Polish, German and French.

9. "Maqala fi-Bayan al Arad" (Discourses on the Explanation of Fits). The Hebrew translation was the "Teshuhoth al Sheeloth Peratoith." An interesting note defends the prescription of wine and music as therapeutic agents, whereas Islamic law forbids both: "Religion prescribes all that is useful and forbids all that is harmful in the world to come, while the physician indicates what is useful and warns against what is harmful in this world."

10. "Sharh Asma al Uqqar" (Glossary of Drug Names). The manuscript of this work was discovered in the library of Aya Sofia, Istambul; the copy was written by no less a personage than the greatest Arabian pharmacological author and physician Ibn al Baytar (d. 1248). It consists of 405 paragraphs, and lists in alphabetical order the names of about 2,000 drugs in Arabic, Syrian, Greek, Persian, Berber and Spanish.

The style, approach and analysis of RaMBaM in these writings are strikingly modern. He was no subservient follower of Hippocrates and Galen, for he challenged their conclusions in many instances. He gave especial care to public health and sanitation. He anticipated modern discoveries on how psychic factors affect bodily health, and that asthma is often caused by allergies. He identified and isolated the autonomic nervous system that regulates the functions of the body apart from human volition. He stressed the study of individual constitutions, opposed the administration of "heroic" doses, and preferred in many cases to build up the patient's strength and leave the rest to nature. He ridiculed superstitious cures, but acknowledged their psychological effect. He explained epilepsy as "Being due to the pressure on the ventricles of the brain." He laid unusual stress, for his time, upon the proper regimen of health, and his efforts were concerned as much with the prevention of disease through rational living and proper diet as with the care of the sick.

The impression that he made upon his contemporaries can be summed up in the words of the poet Ibn Sina Almuhl: "Galen's art heals the body alone, but Abu Imram heals both body and soul. His knowledge made him the healer of his generation."

"Verily, If the moon would submit to Abu Imram's art,
He would heal her of her spots.
Cure her of her periodic troubles
And keep her from ever waning."

SELECTED ABSTRACTS

Diethylstilbestrol in the Treatment of Mumps Orchitis. Hall, W. T., and Killeen, N. F. *U. S. A. F. Med. J. 5:332* (1954). The value of diethylstilbestrol in the treatment and prophylaxis of mumps orchitis has not been fully substantiated. Favorable reports have been published. The authors reported their experience with this drug as further evidence in this matter.

Diethylstilbestrol was given prophylactically to 63 patients with mumps in dosages ranging from 0.5 to 20 mg. a day (average 8.3 mg.) for from 2 to 15 days (average 7.1 days). Of this group of patients 9 developed orchitis. The severity of those cases which did develop appeared to be less severe than in those patients receiving only palliative treatment. Among 34 patients with mumps on symptomatic treatment alone, 11 developed orchitis. The authors felt that this difference would be statistically significant if there were more cases involved.

There was no evidence that diethylstilbestrol was of value in treating cases of mumps orchitis which developed without prior prophylaxis. There were 19 patients so treated.

Vomiting is a frequent side effect of diethylstilbestrol therapy. However, prophylactic treatment was not discontinued for this reason in any case although therapeutic treatment was discontinued for this reason. Emesis is also a frequent symptom accompanying orchitis. The occurrence of severe side reactions is rare but one patient in this series developed hepatocellular jaundice due to the drug. The case history is given.

Observations on the Side Effects of Oxytetracycline Therapy. Hay, P., and McKenzie, P. *The Lancet* No. 6819:945 (1954). The usual gastro-intestinal upsets commonly observed with oxytetracycline therapy were not included in the report of the authors. The over-all incidence of the reported side effects among the 603

patients included in the study was about 8 per cent. These side effects further indicate that the complex host-parasite-drug relationship is still little understood.

The scarlet fever syndrome was observed in 8 of the cases showing the reported side effects. In 7 of these cases the only organism isolated was *Staphylococcus aureus,* in a strain resistant to oxytetracycline. The syndrome usually developed on the 4th or 5th day of oxytetracycline therapy. Two cases developed severe gastroenterocolitis. *Staph. aureus* was isolated from one case. Death occurred in both of these cases. The pathogenesis of these conditions is not yet clear, but most workers consider that the resistant stayphylococci become pathogenic when the other organisms are suppressed by the broad spectrum antibiotics.

Eight patients developed a febrile disturbance with infection of the oropharynx and 3 patients developed urinary infections, from some of which coagulase-positive *Staph. aureus* resistant to oxytetracycline were isolated.

Among the syndromes which were not associated with *Staph. aureus,* 24 patients developed pyrexia without other signs or symptoms. Urticarial lesions developed in 3 patients and transient erythema was seen in 4 patients.

These severe or not-so-severe side effects indicate that the broad spectrum antibiotics are not without dangers. The authors, therefore, emphasized that the broad spectrum antibiotics should not be used for trivial and minor illnesses.

Phenylbutazone in the Management of Rheumatoid Conditions. MacKnight, J. C., Irby, R., and Toone, E. C., Jr. *Geriatrics 9*:111 (1954). Phenylbutazone has been shown to have an analgesic, antipyretic, antihistiminic, and antiinflammatory action. The authors further evaluated the analgesic, antirheumatic, and antiinflammatory properties of the drug on 49 cases of rheumatoid arthritis, 40 of rheumatoid spondylitis, and 11 of gouty arthritis.

The dosage originally employed was 200 mg. four times a day. This was later decreased to 200 mg. three times a day. When symptomatic control was obtained the dosage level was maintained indefinitely, in the cases of rheumatoid arthritis and rheumatoid spondylitis.

Among the 49 patients with rheumatoid arthritis who were treated with this drug, 21 showed major improvement, 20 minor improvement, and 8 showed no improvement. Among those patients showing improvement the inflammatory reaction subsided, pain was reduced, and mobility was increased. Among the 40 patients with rheumatoid spondylitis, 34 showed relief of pain and definite improvement in mobility. The results obtained compared with those obtained with X-ray therapy. Among the 11 patients with acute gouty arthritis, 10 showed symptomatic improvement.

Toxic side effects were observed in 21 per cent of the patients in this series. Of these, 14 had side effects sufficiently severe to require discontinuance of therapy. In most cases the symptoms disappeared when the drug was withdrawn. Those symptoms encountered were: recurrence of peptic ulcer symptoms, leukopenia, skin rash, stomatitis, edema with weight gain, and microscopic and gross hematuria.

The authors felt that the drug is potentially useful in patients with joint disease provided it is used with due regard to the potential toxicity of phenylbutazone.

Therapy With the Antihistamines. Warin, R. P. *Brit. Med. J.* No. 4870:1066 (1954). A series of antihistamine drugs were studied by the author during a period of about five years in an out-patient clinic. A number of interesting facts were uncovered. It was found that a single dose of 40 mg. of promethazine (Phenergan), 275 mg. of mepyramine (Anthisan), and 600 mg. of antazoline were equally effective. With repeated doses it was found that those with a longer action, such as promethazine, will build up a greater effect. The specific antihistamine effect is apparently very similar in all of the drugs studied. The incidence and severity of side effects is usually the determining factor in selecting the antihistamine to be used. The side effects with 75 mg. of chlorcyclizine were approximately the same as with 25 mg. of promethazine. Tripelennamine was found to have about the same effects as mepyramine, antazoline was comparatively weak in its antihistamine effects, and meclozine, phenindamine, and methaphenilene had no useful advantage over the others mentioned above.

The author found that there is a wide difference in the degree of histamine antagonism between individual patients given the same dose of the drug. If a patient shows a small effect with one drug in the series he usually shows a small effect with the other drugs. In addition, the strength of the stimulus bringing about the reaction to be treated in the patient will vary from individual to individual. For example, if the tendency to urticaria is great even in a patient relatively sensitive to an antihistamine, it may be impossible to reach a high enough dosage level to control the eruption. The strength of the stimulus may also fluctuate in the same patient.

Children appear to be relatively insensitive to antihistamines. The drowsiness produced by some antihistamines may be purposely used at night for some patients who have difficulty in sleeping. The dosage of antihistamines should always be gradually reduced before discontinuing treatment.

The antihistamines have a relatively low incidence of side effects. The most common side effect is drowsiness. A number of patients received antihistamines in the clinic continuously over a period of 3 to 4 years without deleterious effects. It has been found that in potential epileptics the antihistamines will occasionally precipitate an attack. There is no definite evidence that tolerance to the antihistamine effect of the drugs occurs.

Practically all of the cases studied were from the dermatology clinic. In discussing the use of the antihistamines the author stated that the areas of usefulness were decreasing as experience increased. It appeared that eventually the only dermatologic conditions showing real benefit from the use of the antihistamines would evolve to those in which wealing is part of the eruption.

The Hypotensive Action of Reserpine. Doyle, A. E., and Smirk, F. H. *The Lancet* No. 6822:1096 (1954). In a study of the effects of reserpine, the purified alkaloid obt ned from *Rauwolfia serpentina*, the authors sought to determine whether or not the effects of the drug were truly hypotensive or merely as a sedative or placebo. Therefore, they administered doses of 2 to 3 mg. of reserpine

(the usual dose being 0.75 to 1.5 mg. daily) singly and three times a day. A group of 20 patients were included in the study. In 6 of 9 patients given single doses of the drug the systolic blood pressure was reduced by 40 mm. Hg. or more and the diastolic by 20 mm. Hg. or more. With the triple doses, systolic falls of more than 40 mm. Hg. occurred in 16 patients and of more than 60 mm. Hg. in 12 of the 20 patients. The blood pressure usually fell on the first or second day. In most cases the lowest blood pressure recorded was well below the basal blood pressure, and well below anything ordinarily observed with placebos. Therefore, the authors concluded that reserpine exerts a true hypotensive effect in most patients.

However, with these large doses the side effects were pronounced. The side effects frequently observed were flushing, nasal and conjunctival congestion, sleepiness, depression, mental excitement, dizziness, nausea, vomiting, and diarrhea. These pronounced side effects make the drug unsuitable for routine use at this dosage level, for the side effects and hypotensive effect seem to occur parallel with the dosage. One marked advantage was noted, there was little or no postural hypotension in the majority of cases.

The authors found that in several cases when 3 mg. or less of reserpine was administered a day along with certain of the methonium salts an additive effect was obtained. The results suggest that such a combination will provide fewer side effects with the blood pressure held at lower levels and with less fluctuation.

A New Stable Theophylline Derivative, Choline Theophyllinate. Duesel, B. F., and Fand, T. I. *Int. Rec. of Med. and Gen. Practice Clin. 167:*245 (1954). Aminophylline is probably an addition compound of the weak acid theophylline and the weak base ethylene diamine. In the acid gastric contents the compound is readily broken down to theophylline and ethylene diamine. Theophylline, although quite insoluble, is quite irritating to the stomach. It was thought that a combination of theophylline with a strong base might provide a more soluble true salt which would also be less irritating and more readily absorbed when given by mouth. As a result, choline theophyllinate was developed.

Choline theophyllinate is a true chemical compound having a well-defined white crystalline structure, and a melting point of 187° to 189° C. It is soluble in water 1:1 as compared to a solubility of 1:120 for theophylline and 1:5 for aminophylline. The pH of an 0.8 per cent aqueous solution is 9.7 as compared to 4.8 for theophylline and 7.6 for aminophylline. The acute oral toxicity (LD_{50}) in mice is 770 mg./Kgm. as compared with 600 mg./Kgm. for theophylline and 585 mg./Kgm. for aminophylline.

Choline theophyllinate is much more soluble and considerably less toxic than aminophylline. It would, therefore, appear that choline theophyllinate should provide a superior form for the oral administration of theophylline.

The Effectiveness of the Antibiotics in the Treatment of Dermatoses. Robinson, H. M., Jr. *U. S. A. F. Med. J. 5*:953 (1954). A board of four experienced dermatologists checked the diagnoses and therapeutic results of about 5000 patients who were treated with penicillin and the broad spectrum antibiotics by local and systemic administration. A number of conclusions were drawn from this extended and careful study.

The ideal antibiotic for local application is one which is not used for systemic administration. The long continued systemic administration of any of the antibiotics is not considered to be good practice because rest periods are necessary in order to prevent the destruction of the natural flora of the skin. Long continued administration greatly increases the danger of the development of fungal infections.

For the local therapy of pyodermas in general the antibiotic of choice is neomycin. Chlortetracycline, oxytetracycline, erythromycin and carbomycin are also quite effective. Such local therapy will suffice in most cases of impetigo contagiosa, ecthyma, and secondarily infected dermatoses. In furunculosis, erysipelas, lymphangitis, and cellulitis systemic therapy is necessary. The above antibiotics, with the exception of neomycin, are effective.

In the treatment of syphilis, penicillin is the drug of choice but chlortetracycline, oxytetracycline, chloramphenicol, and erythromycin are spirocheticidal. Penicillin is not effective in the treatment of granuloma inguinale but all of the other systemically administered antibiotics produce healing of the lesions. However, adequate dosage must be administered and it must be continued for at least one week

after the lesions have healed. Most patients with erythema multiforme will respond to treatment with the systemically administered antibiotics with the exception of penicillin and streptomycin. In acne vulgaris the broad spectrum antibiotics are of value in controlling the pustules but none of the antibiotics can be considered more than an adjunct to current standard therapy.

Antibiotic therapy is definitely contraindicated in moniliasis, gastroenteritis, chronic discoid lupus erythematosus, and in various other diseases where statistical studies prove them to be of no value or where there is a history of sensitivity to their application locally.

Detergent Aerosols in the Treatment of Acute Bronchiolitis. Gans, B. *The Lancet* No. 6820:1011 (1954). Bronchiolitis is responsible for a high fatality rate among infants between about 6 weeks and 2 years of age. Death occurs as a result of anoxia due to mechanical obstruction of the bronchioles by inflammatory swelling and sticky exudate.

During an epidemic of the disease 41 children were treated with oxygen and antibiotics such as penicillin, streptomycin, chloramphenicol, chlortetracycline, and oxytetracycline. The mortality rate was 21.9 per cent. During a subsequent epidemic in which 27 children were involved, treatment consisted of antibiotics, oxygen, and a detergent mist. The latter was used only in the 20 most seriously ill patients. There were no fatalities.

The detergent mist was introduced into the oxygen tank through a vaporizer capable of reducing the particles to less than 3μ in diameter. The mist was administered until the respiratory rate declined. No adverse affects of any kind were observed with the exception of slight redness of the eyelid margins. This disappeared within a few hours after the cessation of treatment.

The mists used were composed of 0.1 per cent sodium lauryl sulfate in sterile water, 0.1 per cent polyoxyethylene sorbitan monooleate (Tween 80) in sterile water, or 0.125 per cent oxyethylated tertiary octylphenolformaldehyde polymer with 2 per cent sodium bicarbonate and 5 per cent glycerin (Alevaire).

The author, therefore, recommended that the detergent mists be used as an adjunct in the treatment of acute bronchiolitis.

The Effect of Stilbenes on Mycoses. Curtis, A. C., Bocobo, F. C., Harrell, E. R., and Block, W. D. *U. S. A. F. Med. J. 5*:949 (1954). Stilbamidine and related aromatic diamidines have shown some usefulness in the experimental treatment of various mycotic infections. The authors treated five patients with cutaneous and systemic blastomycosis with stilbamidine. The drug was given by slow intravenous drip in order to reduce the side effects. The dosage employed was 150 mg. a day dissolved in 250 to 300 cc. of 5 per cent dextrose solution. The optimum dosage has not yet been established but remissions were induced in all of these patients in courses of 12 to 24 daily injections. Total amounts of stilbamidine given to produce the disappearance of the lesions was from 3.0 to 3.9 Gms.

By giving the drug intravenously and slowly the toxic side reactions were reduced to slight and transient nausea and dizziness in most of the patients. However, in one patient the treatment had to be interrupted because of the development of leukopenia and, on another occasion, to signs of hepatic insufficiency. Two of the patients also developed a late trigeminal neuropathy, characterized by paresthesias, anesthesias, and numbness over the distribution of the trigeminal nerve. These symptoms may not appear for 2 to 5 months after a course of treatment with stilbamidine. Follow-up studies also revealed that three of the five patients had experienced recurrences. In one of the cases the causative organism was isolated. *In vitro* studies suggested that the organism had already acquired some resistance to the action of the drug.

Although stilbamidine and related compounds show some promise in the treatment of mycotic infections, the high incidence of toxic side effects and the recurrence rate indicate the need for further study of the effectiveness of these compounds in the treatment of mycotic infections.

A Comparison of Mortality Rates and Water Fluoride Content, Hagan, T. L., Pasternack, M., and Scholz, G. C. *Pub. Health Rep. 69*:450 (1954). Because of the current concern over the possible adverse effects of fluoridation of drinking water, the authors gathered and analysed mortality data from 32 pairs of cities with a population of 10,000 or more scattered over the United States from 16 states. Each pair of cities was composed of a fluoride city and a

nonfluoride city. A fluoride city was one in which the majority of analyses of water samples contained fluoride in concentrations of 0.7 p.p.m. or more. Nonfluoride cities were those in which the fluoride content was 0.25 p.p.m. or less. The total population considered in this study was 892,625 persons in fluoride cities and 1,297,500 in nonfluoride cities.

The average mortality rate for all causes of death was 1,005.0 per 100,000 population in nonfluoride cities and 1,010.6 in fluoride cities. In 16 of the pairs it was higher in fluoride cities and in 16 pairs it was higher in nonfluoride cities. Thus, there was no statistically significant difference in the mortality rate between fluoride and nonfluoride cities. The significance of the differences was determined from the differences between the pairs.

A similar mortality rate comparison was obtained for each of the five causes of death selected for specific study. These five causes were heart diseases, cancer, intracranial lesions, nephritis, and cirrhosis of the liver, the first four of which are listed among the leading causes of death in the United States.

Therefore, the authors concluded that the analysis of this data indicated no statistically significant difference between the mortality rates of fluoride and nonfluoride cities for all causes of deaths and for the five causes specifically studied.

BOOK REVIEW

Textbook of Organic Medicinal and Pharmaceutical Chemistry, Second Edition. By C. O. Wilson and O. Gisvold; 807 pages incl. index. J. B. Lippincott Co., Philadelphia, 1954. Price $10.00

The first edition of this excellent text proved very popular and useful for teachers and students of pharmacy as well as pharmaceutical chemistry. The second edition has been revised and considerably enlarged by its authors.

The general arrangement is very much like the first edition. Following a brief introductory chapter is one containing a discussion of the relation of physiochemical properties to biologic action and a second on the various detoxication reactions in the body. The subject matter on medicinals themselves is arranged for the most part in the sequence of classic organic chemistry. A number of chapters, however, treat drugs having similar pharmacologic activity, e.g., sympathomimetics, which seems to be a wise decision in these cases. While the book is based on U. S. P. XIV and N. F. IX the authors have covered the non-official drugs so well that it will not be obsolete with the advent of U. S. P. XV and N. F. X.

The authors have prepared this text on a level suitable only for students already well grounded in basic organic chemistry. While it is intended for undergraduate students it is by no means elementary in its treatment of the subject. For this reason it serves not only as a text for students but also as an extremely useful reference book for all persons engaged in any phase of pharmacy.

The philosophy of the authors concerning the need of the pharmacist for a superlative training in the constitution and properties of modern drugs will surely be endorsed today by all educators in pharmacy. Dr. Gisvold, Dr. Wilson and their collaborators in this text have made a noteworthy contribution toward achieving this goal. This reviewer considers it the best textbook on medicinal chemistry now available and recommends it without reservation.

L. F. Tice

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